

CLAIMS

1. A material application apparatus that applies a material from a discharge port of the nozzle along a predetermined movement track on said surface while performing relative displacement of a surface of a workpiece disposed on a base and a nozzle with respect to each other, wherein

said discharge port is formed into a non-circular configuration and discharges said material to be capable of forming a bead having a sectional configuration in which the height is larger than 0.9 compared to the width of 1.

2. A material application apparatus comprising an application means for applying a material to a surface to be applied of a workpiece disposed on a base, and a movement means that makes said application means perform relative displacement along a predetermined movement track on said surface so as to apply the material into a bead configuration, wherein:

said application means includes a syringe and a nozzle being connected to the syringe and having a discharge port formed into a non-circular configuration; and

said nozzle is adapted so as to be rotatable in the periphery direction thereof in a state that said syringe is not rotated in the periphery direction thereof.

3. The material application apparatus according to claim 1 or 2, wherein said discharge port is formed into a profile or opening configuration in which a first end portion positioned at the front end side in the direction of the movement along said movement track is wider than a second end portion positioned at the rear end side in the width in the direction crossing said movement track.

4. The material application apparatus according to claim 3, wherein said nozzle is controlled to rotate so that said first end portion precedes the second end portion generally throughout said movement track.

5. The material application apparatus according to claim 2, wherein said nozzle is adapted so as to be rotatable in the periphery direction thereof by a motor provided with an output shaft positioned substantially parallel to said nozzle, and by a drive force transmission member between the output shaft and the nozzle.

6. The material application apparatus according to claim 2, wherein the discharge port of said nozzle is formed into an acute-angled triangle configuration having a base edge portion and a pair of side edge portions constituting two equilaterals longer than the base edge portion.

7. The material application apparatus according to claim 6, wherein said nozzle moves with said base edge portion as said first edge portion and the intersection point of said side edge portions as said second edge portion.

8. The material application apparatus according to claim 1 or 2, wherein said material is set to 10000cP-400000cP in degree of viscosity, and to 4-10 in thixo-index.

9. The material application apparatus according to claim 1 or 2, wherein the relative displacement speed of said surface and the nozzle with respect to each other and the discharge speed of the material from said discharge port are adapted so as to substantially coincide with each other.

10. The material application apparatus according to claim 1 or 2, wherein the space distance between said discharge port and the surface is set to around 1.5-3 times as the height of said bead.